

ABSTRACT

A configurable adaptive echo canceler which can perform acoustical echo cancellation (AEC) or hybrid echo cancellation (HEC) under software control. Particular parameters based on the particular application can be associated with either a suitable AEC or a suitable HEC, and the parameters are made selectable through the use of a control register. Exemplary parameters are accuracy of filter coefficients, a span select to manipulate the expected length of the echo path, a step size to adjust the adaptation of the echo cancellation, enablement of a tap update, selection of adaptation mode, center clipper selection, and sub-band or full-band echo cancellation. With the use of audio line switching, the configurable echo canceler can allow various modes of operation of the telephone, some of which may require an AEC in the installed unit and/or some of which may require an HEC. For instance, in a cordless telephone application, in an intercom mode, a configurable echo canceler in a cordless handset receiver and a configurable echo canceler in a base unit may each be configured as AECs. In a base speakerphone mode, the configurable echo canceler in the base unit may be configured to provide both HEC and AEC, while the configurable echo canceler in the cordless handset receiver may be configured as an AEC. In a handset speakerphone mode, the configurable echo canceler in the base unit may be configured as an HEC, while the configurable echo canceler in the cordless handset receiver may be configured as an AEC.